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19 JUL 1967

MEBRR

MEMORANDUM FOR: Deputy Director for Intelligence

THROUGH : DDI Planning Officer

SUBJECT : Request for Approval of ADP Project
-- SCAM-1

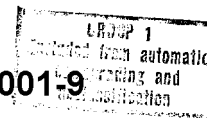
1. Problem

The proposed ADP application is an extension of the military expenditure program now in operation for the Office of Strategic Research (OSR)*. The primary purpose of this extension is to significantly enhance the ability of the Cost Analysis Branch (PA/C) to employ an analytically rigorous methodology for providing a quick response to questions on the nuclear weapon cost implications of specified military force structures. In addition, the extension will produce an output that will provide the intelligence community with a systematic statement of nuclear weapon expenditures on a mission, element, and weapon system basis. Finally, estimating the cost of approximately 70 warhead types in various stages of production, deployment, and inventory (all requiring two or three strategic materials with different cost parameters and lifetime cycles) imposes an extremely complex and time consuming calculating problem on the capacity of analysts equipped with desk calculators. The use of the computer will not only relieve this burden, but also virtually eliminate the substantial possibility of arithmetic error that arises whenever such a myriad of calculations are made by hand.

2. Current Method

At the present time manual calculations of nuclear weapon expenditures are made at relatively gross levels of

*For identification purposes the program has been referred to as project MEBORR which connected it with the originating component -- the Military Expenditures Branch, Office of Research and Reports. It now appears desirable to use the more functional identifier SCAM -- Strategic Cost Analysis Model.

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aggregation and the results are inserted into the existing military expenditure ADP program so that they may be accounted for in the derivation of total expenditures. Nuclear material and weapon technology require a complex and relatively sophisticated methodology to properly account for cost factors such as re-cycling and maintenance of warheads, re-working of materials, material inventory management, etc.. The necessary data base to permit the application of such a methodology is available, but the required computational burden is much too large and complex to be efficiently handled by manual calculations.

3. Description of Proposed Application

The primary objective of the proposed application is to add to the existing ADP system the capability to generate accurate nuclear weapon costs directly from a military force statement -- i.e., the order-of-battle inputs that are already one of the basic inputs to the system -- and to allocate the costs to the appropriate missions, elements, and weapon systems. This will be made possible by building into the system, as variables, the necessary data on warhead characteristics, weapon system loading factors, nuclear material price and inventory data, and other relevant information.

4. Advantages of Proposed Application Over Current Method

The following list summarizes the major advantages that have been alluded to above.

- a. Data on nuclear weapons expenditure implications will be made available in much greater detail -- e.g., on a weapon system basis rather than the major force element level.
- b. It will be possible to use a methodology that takes full advantage of the available data base and knowledge of nuclear technology.
- c. Calculations will be performed much more rapidly and with much less chance of error.
- d. Response time will be decreased, especially with respect to servicing ad hoc requests and special NIE's.

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5. Estimated Resources

a. Personnel

1) PA/C

(a) Development

The nuclear weapons costing problem has already received about $1\frac{1}{2}$ man-years of effort. Approximately 3 additional man-months will be required to complete the development phase.

(b) Maintenance

After completion of the development phase, about 2-3 man-months/year will be needed to maintain the system and support the major military costing efforts that require consideration of nuclear weapon cost implications.

2) OCS

(a) Development

OCS estimates that 3-man-months of effort will be required to complete the systems analysis and programming phase of the project.

(b) Maintenance (Testing, creating files to conform with new program.)

The proposed project will require about 2 man-months of effort.

b. Machine Time*

OCS estimates that approximately 10 hours of computer time will be necessary to test and "debug" the nuclear weapons program.

*The proposed nuclear weapons program extension would be run as part of the current military-expenditures production run and, when operational, would contribute a relatively small increment to the computer time now required.

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6. Degree of Urgency

It is anticipated that the next cycle of costing efforts by OSR for national intelligence support will begin by mid-August. Although it appears unlikely that the proposed extension can be fully operable at the initiation of this cycle, its completion at the earliest possible date will be extremely helpful to OSR.

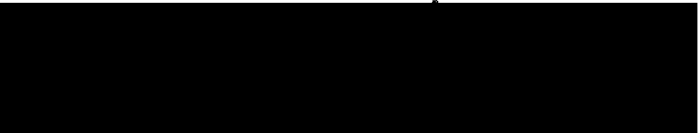
7. ADP Plan

This project, embodying the proposed scope and level of effort, has already been included in the ADP plan.

8. Outlook

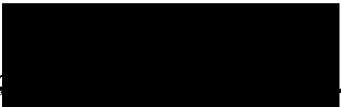
It is anticipated that continued and expanded use will be made of the overall defense expenditure program. It is also anticipated that future expansion and revisions will be required as demand for output increases and new ways of making the system more efficient and responsive are developed.

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Director of Strategic Research

APPROVED:

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for 
R. J. SMITH
Deputy Director for Intelligence

25 July 67
Date

Attachment:
Form 930

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